

Swanson, Greg

From: Boyd, Max
Sent: Friday, June 29, 2001 9:57 AM
To: Finnegan, Charles; Bell, James F; Swanson, Greg; Dean, Harry
Subject: FW: Node 2 NDE

Info from Kornel.

Max

-----Original Message-----

From: NAGY, KORNEL, PHD (JSC-ES) (NASA)
[mailto:kornel.nagyl@jsc.nasa.gov]
Sent: Thursday, June 28, 2001 1:42 PM
To: 'Boyd, Max'; 'Imtiaz Kauser (E-mail)'
Subject: Node 2 NDE

Max, I looked at the requirements in SSP 30558.

The following items were found:

1. In Appendix B Glossary, the following definition is given for proof test:

"A load or pressure in excess of limit load or maximum design pressure applied in order to verify the structural integrity of a part or to screen initial flaws in the part."

The purpose of the proof test is to screen for flaws. To screen for flaws requires an inspection method that can detect the presence of those flaws. A visual inspection by the human eye is not sufficient. An NDE method is required to screen for flaws.

2. Par. 4.4.1. Pressure vessels, subparagraph c. states:

"Pressure vessels whose failure at Maximum Design Pressure (MDP) would not be leak before burst, or would release a hazardous fluid, or whose loss of pressure would be potentially catastrophic, shall be safe-life vessels. All other pressure vessels shall be either safe-life or leak before burst at MDP."

Node 2 is a habitation module, loss of pressure in that module can result in the loss of crew, which is catastrophic failure. Loss of pressure can occur without the full unzipping of the module.

3. Par. 4.4.1. Pressure vessels, subparagraph g. states:

"NDE of safe-life pressure vessels shall include inspection of welds before and after proof testing."

Node 2 is a safe-life pressure vessel.

This is the result of my initial look at the requirements. Please call me to discuss.

Thanks

Kornel